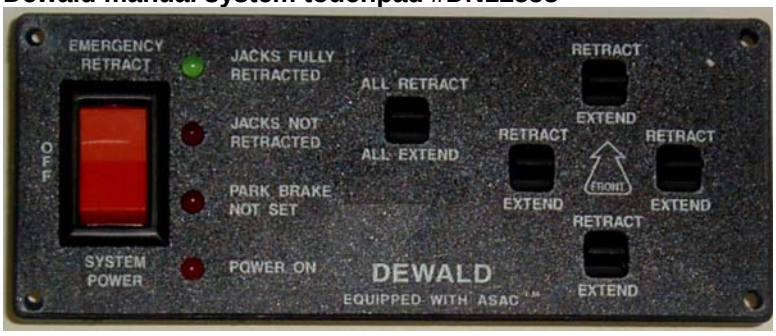
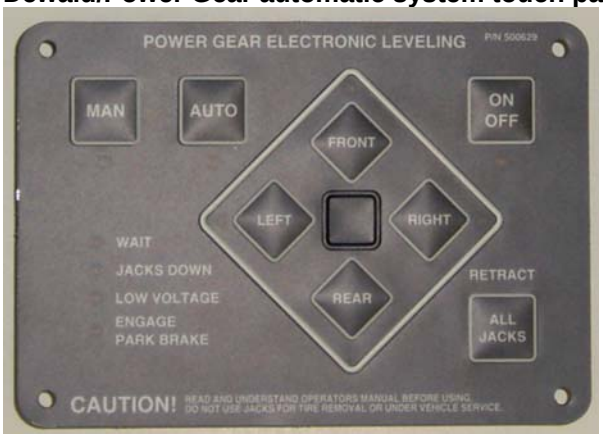
OPERATION MANUAL for DEWALD HYDRAULIC LEVELING SYSTEMS

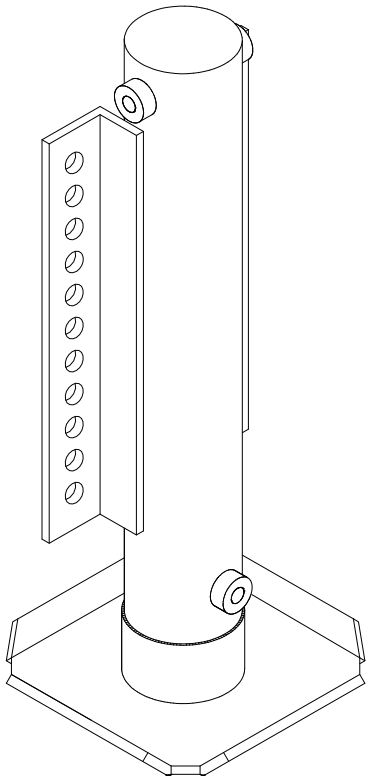
(with square footpads on jacks)

Dewald manual system touchpad #DN12558



Dewald/Power Gear automatic system touch pad #500629





Visit us on the web at **www.powergearus.com**

82-L0376 Rev.1 Released: Oct-2004

TABLE OF CONTENTS

Page 3: Leveling procedures for Dewald Manual Leveling System

Page 6: Leveling procedure for Dewald/Power Gear Automatic leveling System

Page 9: Manual retraction procedure

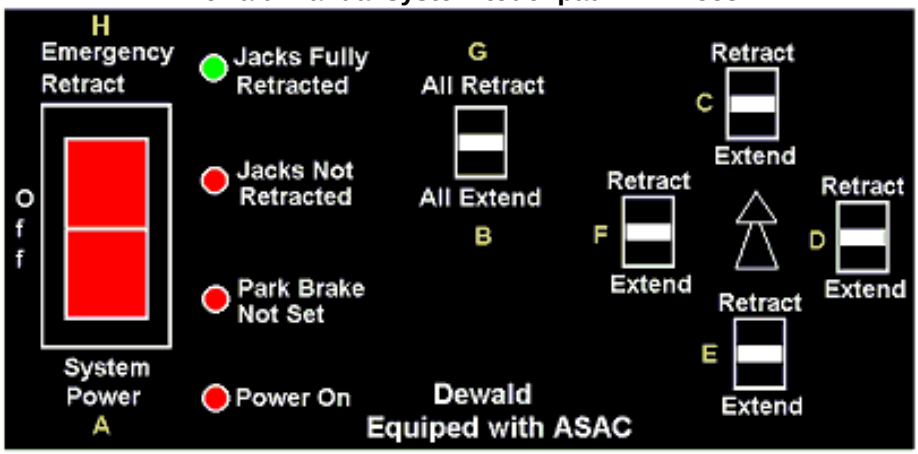
Page 10: Preventive maintenance

Page 11: Troubleshooting guide

Page 12: Warranty information

LEVELING PROCEDURES FOR DEWALD MANUAL LEVELING SYSTEM

Dewald manual system touchpad #DN12558



NOTES BEFORE YOU LEVEL YOUR COACH

Park brake must be set before jacks will operate.

When looking for a leveling site, always make sure the surface is as level as possible.

Check leveling site to make sure obstructions have been cleared away for proper jack operation.

Keep people clear of coach prior to turning the leveling system on and while leveling system is in use.

Never expose hands or other parts of the body near hydraulic leaks. High-pressure oil leaks may cut and penetrate the skin causing serious injury.

WARNING

This is a leveling system *only* and is not intended to lift your coach completely off the ground. Attempting to lift your coach completely off the ground (for example, to use this leveling system to change a tire) could cause damage to the system and serious injury to the parties involved. If a tire should require changing please have the proper equipment and contact a professional.

Important: **if your coach is equipped with a slide out(s) always level your unit first, and then operate the slide out room(s). When retracting the slide(s), always retract the room(s) first then retract the leveling jacks. Following this procedure will produce the least amount of stress on your chassis.**

STEP 1: Turn the Leveling Power Panel On. (System Power Switch "A")

This should be turned on only when leveling operation is required and turned off when finished.

Note: If your coach is equipped with air suspension, you may have an air dump switch on or near the control panel. Exhaust the air from the suspension per vehicle manufacture instructions and then proceed with leveling of coach. ***THIS MUST BE DONE BEFORE PROCEEDING TO STEP 2.***

STEP 2: Extend the Leveling Jacks (All Extend Switch "B")

Hold this switch "on" until you feel all the jacks contact the ground.

STEP 3: Level The Coach (Leveling Switches "C-F")

Switches C through F are for leveling the coach only.

1. Press switch "C" and lift the front of the coach at least 3 inches. This is important and necessary to allow the coach to pivot when leveling side to side. If there is insufficient jack stroke to lift the front of the coach at least 3 inches the coach will have to be moved to an area with less front to back slope.
2. Extend front or rear jacks as necessary to level the coach from front to rear.
3. Press switch "D" or "F" to level the coach from side to side.

The front two jacks work together with switch "C" to raise the front of the coach. The back two jacks work together with switch "E" to raise the rear of the coach. The right rear works to raise the right side of the coach with switch "D". The left rear works to raise the left side of the coach with switch "F".

Front Switch **(**C)
Levels using the front jacks.

Left Switch (F)
Levels using the left rear jack.

Right Switch **(**D)
Levels using the right rear jack.

Rear Switch **(**E)
Levels using the rear jacks.

STEP 4: Retract the Leveling Jacks (All Retract Switch "G")

Automatic Retract: just trip the switch momentarily and all jacks will automatically retract. ***This is the proper way to retract your jacks. This is the only retract switch that will give you a green light on the power board.***

Note: **To stop jacks for any reason while system is in this automatic retract mode, press the System Power switch to "Off" and the jacks will stay in that position. Turn the System Power back "On" if you want to extend them again.**

Emergency Retract Switch (H): **This switch is engaged to retract jacks and is not automatic. Operator must maintain engagement on switch to retract the jacks. If jacks are retracted in this manner you will NOT receive a green "Jacks Fully Retracted" light on the panel.**

CAUTION

Never lift the wheels off the ground when leveling the motor home.

CONTROL PANEL LIGHTS

Jacks Fully Retracted: **This is a green light that signals the jacks are in a retracted position. Always use the "All Retract" switch when retracting jacks, and the green light will come on automatically.**

Jacks Not Retracted: **This is a red light. It will light when any jack has been extended.**

Parking Brake Not Set: **This is a red light reminding you that the park brake must be set to level your coach.**

Power On: **Is a red light that tells you system power to operate the leveling jacks is on.**

ASAC: THE DRIVE AWAY PROTECTION FEATURE

***ASAC* operates when the park brake is released and the ignition is on, if needed. If the jacks are extended at this time, *ASAC* will automatically retract them. Therefore, *ASAC* guarantees that you cannot drive away with jacks in an unsafe condition.**

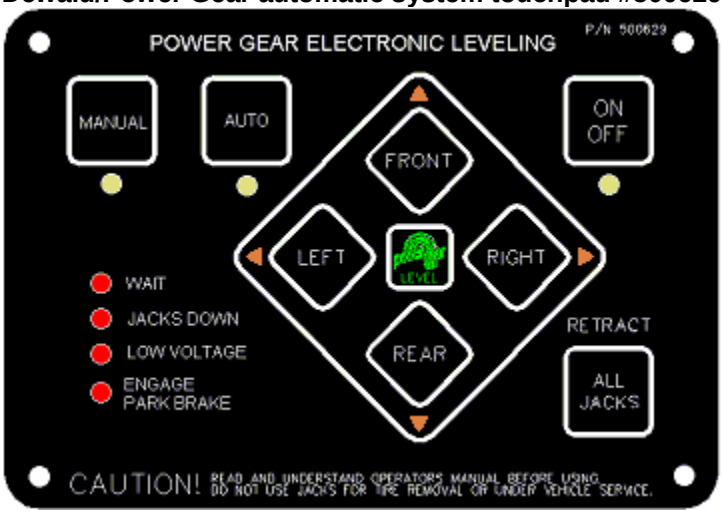
Operation: If the park brake is released while the ignition is on, or the ignition is turned on when the park brake has already been released, *ASAC* will operate if the jacks are extended. *ASAC* will operate this way even if the control panel "System Power" switch is off.

During *ASAC* operation: you will hear the hydraulic pump run and then shut off when *ASAC* has finished. An audible warning will sound, and the "Park Brake Not Set" light will be on as well. This audible warning shows the operator that *ASAC* is retracting the jacks, and warns the driver not to drive away until the operation is complete. When *ASAC* finishes its cycle, the audible warning sound will stop. If the control panel power switch is on at this time, you will also see a green light when *ASAC* has finished. If the control panel power switch is off, you will see the green light for a few seconds, and then all lights will shut off. It is now safe to drive away.

***Note:* If the main battery disconnect ("Chassis Disconnect") has been turned off since the last time "All Retract" or ASAC has operated, *ASAC* may still operate once even if the jacks are already retracted. It will run for about 7 seconds while it re-checks to make sure all jacks are fully retracted and pressurized.**

LEVELING PROCEDURES FOR DEWALD/POWER GEAR AUTOMATIC LEVELING SYSTEM

Dewald/Power Gear automatic system touchpad #500629



NOTES BEFORE YOU LEVEL YOUR COACH

Park brake must be set before jacks will operate.

Transmission must be in Park or Neutral before jacks will operate.

When looking for a leveling site, always make sure the surface is as level as possible.

Check leveling site to make sure obstructions have been cleared away for proper jack operation.

Keep people clear of coach prior to turning the leveling system on and while leveling system is in use.

Never expose hands or other parts of the body near hydraulic leaks. High-pressure oil leaks may cut and penetrate the skin causing serious injury.

WARNING

This is a leveling system *only* and is not intended to lift your coach completely off the ground. Attempting to lift your coach completely off the ground (for example, to use this leveling system to change a tire) could cause damage to the system and serious injury to the parties involved. If a tire should require changing please have the proper equipment and contact a professional.

Important: **if your coach is equipped with a slide out(s) always level your unit first, and then operate the slide out room(s). When retracting the slide(s), always retract the room(s) first then retract the leveling jacks. Following this procedure will produce the least amount of stress on your chassis.**

EXCESS SLOPE

When the coach is parked on an excessive slope the leveling requirements may exceed the jack lift stroke capability. When this occurs, the 4 orange jack lights and the center all level green light will blink. The coach must be moved to a more level surface, or can be leveled manually.

STEP 1 - Push "ON/OFF" pad on control panel.

The system is now operational and the electronic level lights will become active.

STEP 2 – Check to see that the touch-pad parking brake light is not flashing.

Engage parking brake if parking brake light is flashing.

STEP 3 – Push the “Auto” pad to begin the automatic leveling cycle.

CAUTION: After starting the automatic leveling cycle it is very important that you do not move around in the coach until the unit is level and the green Power Gear Level light illuminates in the center of the touch pad. Failure to remain still during the leveling cycle could have an affect on the performance of the leveling system.

STEP 4 – Leveling with “manual” mode.

If you feel that further adjustments are necessary, simply push and hold the “MAN” pad for approximately 5 seconds until the light under this button is illuminated. Push the appropriate leg pad to override the system and level the coach to *your liking.*

Note: When leveling the coach in manual mode, the jack(s) will “hesitate” for approximately 5 seconds as the controls “sense” that the coach is passing through the programmed zero point (all level).

Note: When in the manual mode, if the retract button is pushed the jacks will only retract as long as the button is depressed.

STEP 5 – Push “ON/OFF” pad to de-energize the system.

CAUTION

Never lift the wheels off the ground when leveling the motor home.

DRIVE AWAY PROTECTION SYSTEM

If the ignition is in the “RUN” position, jacks are down, and the operator takes the transmission out of neutral or park, or releases the parking brake, the “JACKS DOWN” indicator will flash and the alarm beeper will activate. The system will then automatically retract the jacks until the jacks are fully retracted

JACK RETRACT PROCEDURES

NOTE: Coach ignition must be on.

STEP 1 - Energize the system by pushing "ON/OFF" pad on control panel.

The "ON/OFF" and “JACKS DOWN” lights will be lit.

STEP 2 - Push and release the "RETRACT ALL JACKS" pad.

All the jacks will start to retract and return to the full retract position automatically. When all jacks return to full retract position the "JACKS DOWN" light will go out.

STEP 3 - When the "JACKS DOWN" light goes out push the "ON/OFF" pad on the control panel to de-energize the system.

After a visual inspection around the coach to verify the jacks are fully retracted, you may proceed to travel.

AUTOMATIC SAFETY SHUTOFF FEATURE

If the touch panel is left on and inactive for four minutes it will shut off automatically.
To reset the system the coach ignition must be turned off, then back on.

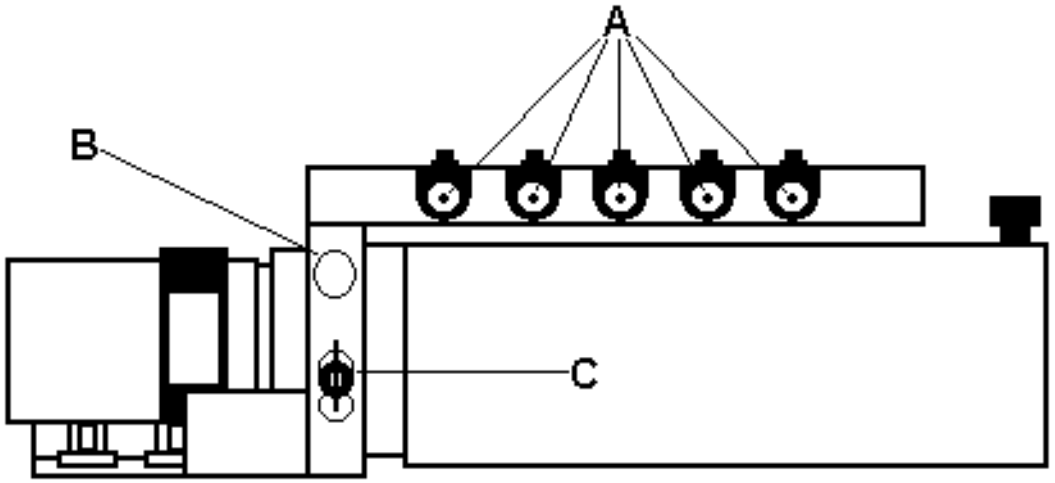
MANUAL RETRACTION PROCEDURE

Note: *Please read the entire manual before operating this system.*

Your Dewald Hydraulic Power System has been designed to operate both the leveling and slide out system from one power source. This power unit has a built-in hand pump for manually retracting the jacks and slide out room(s) if complete power should be lost to your leveling system.

Hand Pump Operation

1. Turn each of the small slotted setscrews (A) on the front of the pump assembly clockwise until they stop. This will hold the valves open.
   Note: Coaches that pre-date 2001 may have a red knurled knob on the end of each valve (A). Instead of turning a setscrew as instructed, you simply pull out the red knobs and turn them a ¼ turn in either direction. When you release them, they will stay locked in the "out" position.
2. Turn the silver (larger) knurled knob (B) on the front of the power unit 2 turns counter-clockwise.
3. Insert the pump handle into the receptacle (C) and pump the hand pump.
4. When all the jacks and the slide out room(s) are fully retracted, tightly close the silver knurled knob clockwise.
5. Turn each of the small slotted setscrews counter-clockwise, until snug.
   Note: If equipped with red knobs (A), turn them a ¼ turn to pop them back into normal operating position.

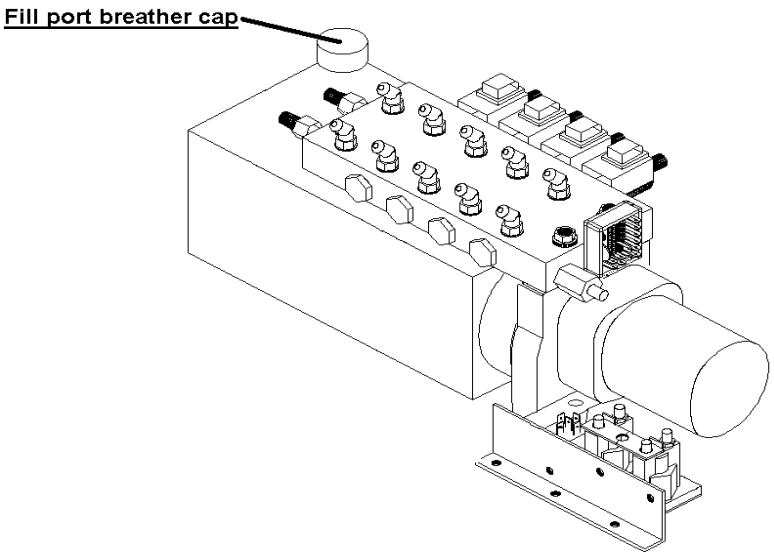


Note: Number of valves (A) shown will vary depending on how many slide rooms are operated by the pump assembly.

Please read the owners' manual from the manufacturer who built and designed your motor home for further leveling and slide out room operating information and safety features.

PREVENTIVE MAINTENANCE

1. Check the fluid level every month.
2. Check and/or fill the reservoir with the jacks and room(s) in the fully **retracted** position.
3. The fluid should be within 1/2 inch of the top of the reservoir tank.
4. Change fluid every 24 months.
5. Inspect and clean all hydraulic pump electrical connections every 12 months.
6. Remove dirt and road debris from jacks as needed.
7. If jacks are down for extended periods, it is recommended to spray exposed leveling jack rods with a silicone lubricant every 5 to 7 days for protection.
8. **If your coach is located in a salty environment (within 60 miles of coastal areas), it is recommended to spray the rods every 2 to 3 days with a silicone lubricant.**



RECOMMENDED HYDRAULIC FLUIDS FOR YOUR DEWALD HYDRAULIC PUMP

The fluids listed here are acceptable to use in your pump assembly. Contact coach manufacturer or selling dealer for information about what specific fluid was installed in your system.

It is not recommended that hydraulic fluid and automatic transmission fluids be mixed in the reservoir.

In most applications, Type A automatic transmission fluid (ATF, Dexron III, etc.,) will work satisfactorily. Mercon V is also recommended as an alternative fluid for Dewald hydraulic systems.

If operating in cold temperatures (less than -10° F) the jacks may extend and retract slowly.
For cold weather operation, fluid specially-formulated for low temperatures may be desirable. Mobil DTE 11M, Texaco Rando HDZ-15HVI, Kendall Hyden Glacial Blu, or any Mil. Spec. H5606 hydraulic fluids are recommended for cold weather operation.

Please consult factory before using any other fluids than those specified here.

WARNING

Your coach should be supported at both front and rear axles with jack stands before working underneath, failure to do so may result in personal injury or death.

TROUBLESHOOTING

System will not turn on and "on/off" indicator light will not illuminate

Touchpad #	Probable Cause	Corrective Action
Both	Batteries disconnected	Reconnect batteries, and/or check connections
	Battery voltage low (below 9.5 volts)	Recharge batteries or replace if necessary
DN12558	Check connection of 6-pin harness on back of touch pad	Unplug and reconnect as necessary
	Check for a blown fuse on the 6-pin harness that plugs into the back of the touch pad	Replace fuse with 6.25 amp Slo-Blo fuse
500629	Ignition must be in run position	Turn ignition to run position
	Park brake must be set	Set parking brake
	Transmission not in park or neutral	Take coach out of gear
	Leveling control has timed out and shut down	Turn off touch pad for a moment, then turn back on

System is on, but pump won't run

Touchpad #	Probable Cause	Corrective Action
Both	Bad connection of motor ground wire at pump	Check grounding of black wire coming directly out of 12v motor at the pump assembly
DN12558	Park brake must be set	Set parking brake
500629	All four orange level lights and center green "all level" light are blinking	Coach is parked on an excessive slope. Move coach to a more level sight. If coach is already parked on a known level sight, then electric controls need calibrated (see TIP sheet # 153)

Pump runs, but jacks do not extend

Touchpad #	Probable Cause	Corrective Action
Both	Manual override valves (see label "A", pg 9) are open	Turn slotted setscrews in the end of the valves counter clockwise until snug. If red knobs, turn until they pop back into position
	Hand pump valve (see label "B", pg 9) is open	Turn knob clockwise until snug
	Low fluid	With all jacks and slide room(s) fully retracted, fluid should be 1/2 inch from the top of the tank reservoir

Pump ran during extension or retraction, then stopped

Touchpad #	Probable Cause	Corrective Action
Both	Motor overheated, thermal overload protection in motor tripped	Let system rest for 5-10 minutes to allow automatic breaker in motor to reset

Locations of breakers, fuses, fuse panels, etc. are coach specific. Consult your coach owner's manual or the coach manufacture for locations of these components.

The following information will guide you to repairs that may be made on site. For problems not covered here, contact your service center or our website for more extensive troubleshooting information in the service manual for your system.

LIMITED WARRANTY

Power Gear warrants to the original retail purchaser that the product will be free from defects in material and workmanship for a period of two (2) years following the retail sales date. Power Gear will, at its option, repair or replace any part covered by this limited warranty, which following examination by Power Gear or its authorized distributors or dealers, is found to be defective under normal use and service. No claims under this warranty will be valid unless Power Gear or its authorized distributor or dealer is notified in writing of such claim prior to the expiration of the warranty period. Warranty is transferable pending documentation of original sale date of product.

THIS WARRANTY SHALL NOT APPLY TO:

- Failure due to normal wear and tear, accident, misuse, abuse, or negligence.
- Products that are modified or altered in a manner not authorized by Power Gear in writing.
- Failure due to misapplication of product.
- Telephone or other communication expenses.
- Living or travel expenses.
- Overtime labor.
- Failures created by improper installation of the product's slideout system or slideout room to include final adjustments made at the plant for proper room extension/retraction; sealing interface between slideout rooms and side walls; synchronization of inner rails; or improper wiring or ground problems.
- Failures created by improper installation of leveling systems, including final adjustments made at the plant, or low fluid level, wiring or ground problems.
- Replacement of normal maintenance items.

There is no other express warranty other than the foregoing warranty. THERE ARE NO IMPLIED WARRANTIES OF MERCHANTIBILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL POWER GEAR BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state. Some states do not allow the limitations of implied warranties, or the exclusion of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

For service contact your nearest Power Gear authorized warranty service facility. Warranty service can be performed only by a Power Gear authorized service facility. This warranty will not apply to service at any other facility. At the time of requesting warranty service, evidence of original purchase date must be presented.

Power Gear
1217 E. 7th Street
Mishawaka, IN 46544
www.powergearus.com